

CLAIMS

1. Optical light collection system, this system  
(50, 66, 80) being intended to collect light emitted by  
at least one light source (52, 68, 82, 94, 102) and to  
focus the collected light onto at least one light  
5 detection device (54, 70, 84, 96, 106), this system  
being characterised in that it comprises at least two  
mirrors, namely a first mirror and a second mirror, and  
in that the source is a luminescent discharge lamp, the  
first mirror (58, 74, 88) being capable of collecting  
10 light emitted by the light source and making the  
collected light converge onto the second mirror, this  
second mirror (60, 76, 90) being capable of making the  
light that it receives from the first mirror converge  
onto the light detection device, this system thus  
15 amplifying the light flux, being achromatic and having  
a low absorption, particularly for the ultraviolet  
radiation, and in that the system is provided with:

- a chamber that is opaque to all light,  
particularly ultraviolet radiation, and in which  
20 the light source, the light detection device and  
the mirrors are placed, and
- means of creating a vacuum in this chamber or  
filling it with a gas that is transparent to  
ultraviolet radiation.

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2. System according to claim 1, in which the first  
and second mirrors (58, 60; 74, 76) have the same axis  
(X1, X2), this same axis forming the optical axis of  
the system, and the respective focal points (F1, F2;

F3, F4) of the first and second mirrors are located on this optical axis.

3. System according to claim 2, in which the  
5 respective focal points (F1, F2; F3, F4) of the first and second mirrors are distinct.

4. System according to either claim 2 or 3, in which the first mirror comprises a central drilling  
10 (64, 80) that is capable of allowing light focussed by the second mirror to pass towards the light detection device.

5. System according to claim 1, in which the first  
15 and second mirrors (88, 90) are offset from each other, at least one of the first and second mirrors being off axis.

6. System according to any one of claims 1 to 5,  
20 in which each of the first and second mirrors (58, 74, 88; 60, 76, 90) is chosen from among spherical mirrors, parabolic mirrors and ellipsoidal mirrors.

7. System according to any one of claims 1 to 6,  
25 in which each of the first and second mirrors (58, 74, 88; 60, 76, 90) is covered by a metallic or chemical deposit.

8. System according to any one of claims 1 to 7,  
30 in which the light detection device comprises an entry slit (56, 72, 86, 110) and the second mirror is

designed to focus the light that it receives from the first mirror on this entry slit.

9. System according to any one of claims 1 to 7,  
5 in which the light detection device is an optical spectrometric analysis device (96) comprising an entry slit and the second mirror is designed to focus light that it receives from the first mirror on this entry slit.

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10. System according to any one of claims 1 to 9, in which light emitted by the light source contains one or more ultraviolet components.